

Helensville Wastewater Treatment Plant
Annual Report

Final - September 2026

Watercare

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REVISION HISTORY

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2	30/09/2026	Gabriel Freitas		
3				

APPROVED

Date	Name	Position	Signature
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CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Discharge consent	Wastewater discharge permit with planned upgrades in two stages Discharge of contaminants into air	May 2012, expires July 2027	22225 and 37541 (DIS60265455)	Flow meters maintained. Record of daily rainfall levels maintained Measure effluent quality Environmental monitoring of discharge point and surrounding area Annual reports and 3 yearly REMP to be submitted
WWTP upgrade	Earthworks to install MABR	May 2022	BUN60401300	Inspect sediment & erosion controls regularly
Management Plan	Air Quality Management Plan	July 2023, expires July 2027	37541	Created to meet conditions of consent 37541
Management Plan	Operations Management Plan	July 2023, expires July 2027	22225 and 37541 (DIS60265455)	Created to meet conditions of consent 22225 and 37541
Receiving Environment Monitoring	Report summarises 3-yearly environmental sampling.	September 2024	22225 and 37541 (DIS60265455)	Next report due in 2027

EXECUTIVE SUMMARY

This annual report for Helensville Wastewater Treatment Plant (WWTP) outlines the plant's operational performance, incidents and compliance with consent conditions for the 2025–2026 reporting period. The report fulfils the requirements under consents 22225 and 37541, which oversee wastewater discharge and air emissions.

Key findings include:

WWTP overview: The WWTP is located adjacent to the Kaipara Coast Highway and discharges treated effluent into the Kaipara Estuary. No major upgrades were undertaken during the reporting period, and no incidents or complaints were recorded.

Effluent volume non-compliance: The rolling 12-month average exceeded the Condition 5 limit of 1,500 m^3/day for much of the reporting period due to frequent wet weather events. For pond safety reasons, the daily maximum limit of 5,500 m^3 was exceeded once on 22 January 2026 with 860 m^3.

Effluent quality standards: Effluent quality consistently met all consented limits for 5-day carbonaceous biochemical oxygen demand ($cBOD_5$), total suspended solids (TSS), *Escherichia coli* (*E. coli*), and ammoniacal nitrogen. The ultrafiltration unit demonstrated high removal efficiencies, with over 90% reduction in all key parameters.

Effluent quality trends: Seasonal analysis of effluent quality showed stable performance across most parameters. Autumn exhibited the greatest variability in microbial indicators, while spring showed the lowest concentrations of enterococci and *E. coli*.

Influent quality trends: Influent ammonia concentrations displayed strong seasonal variation, peaking in summer and spring. In contrast, total phosphorus levels remained relatively stable year-round. Despite these fluctuations, the WWTP maintained high nutrient removal efficiency, with ammonia removal slightly higher in summer and phosphorus removal more effective in winter.

The plant maintained a Category 2 compliance rating because of the effluent volume breaches. Approximately 4.1 km of pipeline renewal is planned for financial year 2027 to reduce inflow and infiltration and improve flow compliance.

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ABBREVIATIONS

Term	Definition
BOD_5	5-day Biochemical Oxygen Demand
CFU	Colony Forming Unit
$cBOD_5$	Carbonaceous 5-day Biochemical Oxygen Demand
DO	Dissolved Oxygen
DRP	Dissolved Reactive Phosphorus
E. coli	*Escherichia coli*
g/m^3	Grams per cubic metre
gN/m^3	Grams of nitrogen per cubic metre
gP/m^3	Grams of phosphorus per cubic metre
IANZ	International Accreditation New Zealand
MABR	Membrane Aerated Biofilm Reactor
mg/L	Milligrams per litre
MPN	Most Probable Number
NH_4-N	Ammoniacal Nitrogen
REMP	Receiving Environment Monitoring Programme
SVOC	Semi-Volatile Organic Compounds
TSS	Total Suspended Solids
UF	Ultrafiltration
WWTP	Wastewater Treatment Plant

1 INTRODUCTION

1.1 Background

This report fulfils the annual reporting requirements of Condition 34 of resource consents 22225 and 37541 (DIS60265455), which authorise wastewater and air discharges associated with the Helensville Wastewater Treatment Plant (WWTP). It presents Watercare's assessment of operational performance, environmental monitoring and consent compliance for the reporting period from 1 July 2025 to 30 June 2026. The report also provides context on plant operation, maintenance activities, discharge volumes, effluent quality and any incidents or complaints recorded during the year.

1.2 Scope

The scope of this report is to summarise the environmental performance of the Helensville WWTP and assess compliance with the relevant consent conditions for the reporting period. It focuses on the monitoring and operational information required under the consents and provides supporting analysis to identify trends in plant performance over time. The report includes:

- a description of the WWTP, including its location, treatment process and discharge pathway;
- a summary of key maintenance activities, operational changes and any planned works relevant to environmental performance;
- plant performance, including:
    - trends in treated effluent quality and compliance with discharge quality standards;
    - the effectiveness of the ultrafiltration unit and the removal of nutrients and solids;
    - trends in influent and effluent flow volumes, including the influence of rainfall where relevant;
    - changes in influent load and seasonal variation in key parameters.
- a summary of compliance with relevant consent conditions, including any non-compliances, incidents, complaints and associated follow-up actions;
- a summary of receiving environment monitoring, where applicable, and reference to supporting appendices and data sources.

1.3 Additional details

The active consents, management plans and receiving environment monitoring requirements relevant to this report are summarised in the consent change and monitoring history table at the front of this report. Detailed compliance commentary is provided in Appendix D, and the data sources used for the assessment are listed in Appendix E.

2 OPERATIONAL DETAILS

2.1 Current operations

The WWTP is located adjacent to the Kaipara Coast Highway. The general location of the WWTP in relation to the Kaipara River is shown in Figure 2-1. The WWTP consists of a:

- screen;
- biofilter;
- oxidation pond system;
- membrane aerated biofilm reactor;
- membrane ultrafiltration unit; and
- tidal discharge point.

Treated effluent from the tidal discharge pond goes to the Kaipara Estuary on outgoing tides. The discharge point is approximately 5 km upstream of the river mouth to the Kaipara Harbour.



Figure 2-1 Aerial image of the Helensville WWTP, highlighted in red, with the location of the discharge point shown by a red diamond.

2.2 Changes in reporting year

No significant operational, infrastructure or process changes occurred during the reporting period that materially affected plant operation, monitoring or consent compliance.

2.3 Future changes

The WWTP maintained a Category 2 compliance rating during the reporting period due to exceedances of the consented effluent discharge volume. Investigations have identified significant inflow and infiltration (I&I) from the wastewater network as a key contributor to elevated flows entering the treatment plant. To address this issue, a major wastewater network renewal programme has been approved for financial year 2027, including the renewal of approximately 4.1 km of wastewater pipeline in Helensville and investigation of a further 1.86 km of network. These works are targeted at reducing inflow and infiltration, improving network performance, and alleviating capacity constraints at the Helensville Wastewater Treatment Plant.

3 METHODOLOGY

3.1 Monitoring

Influent and effluent discharge volumes were recorded continuously using calibrated flow meters installed at the WWTP.

Effluent quality monitoring was carried out through routine grab sampling at the tidal discharge pond outlet (see Figure 2-1). Sampling and analyses were performed by Watercare's Laboratory for the parameters specified under Condition 16 of the wastewater discharge consent (Table 3-1)

Table 3-1: Consent-required effluent quality monitoring

Frequency	Parameter
Twice weekly	Dissolved oxygen
Fortnightly	BOD_5, TSS, enterococci, *E. coli*, ammoniacal nitrogen
Monthly	Nitrate-N, nitrite-N, TP, DRP and chloride
Twice a year	Adenoviruses, enteroviruses
Annually	Trace metals, SVOC trace profile, acid herbicides

Odour management was assessed through regular site inspections and complaint monitoring.

3.2 Data handling and analysis

Monitoring and analysis for this report were undertaken in accordance with the requirements of the consents, the approved Operations Management Plan, and the Air Quality Management Plan. Flow data were stored in Watercare's PI historian and retrieved using tag IDs specific to inflow and discharge points (see Appendix E for data sources and ID references). Daily rainfall records were obtained from a nearby Auckland Council rain gauge, to support assessment of correlations between rainfall and effluent volumes.

Seasonal and annual statistical analyses were applied to assess compliance against the median and 92nd percentile limits set in the consent. Where relevant, rolling 12-month averages were calculated directly from PI-tagged flow and load data. Quality assurance included cross-checking dataset completeness against lab submission sheets and PI tag data logs (see Appendix A for effluent volume data, Appendix B for effluent quality data, and Appendix E for the register of data sources and PI tags). Pearson correlation tests were used to assess the influence and significance of rainfall on effluent quantities over the reporting period and over the past four years, by comparing the daily effluent flow data with daily rainfall from 2022 to 2026. Mann-Kendall and seasonal-Kendall tests were also conducted on the daily effluent flows to determine long-term and seasonal trends in effluent flows.

Records of odour inspections are included in Appendix C. Compliance commentary against each condition of the consent is provided in Appendix D.

3.3 Compliance criteria

Data from the 2025–2026 reporting period were analysed to assess WWTP performance. In addition, as required by Condition 34 of the consent, historical data were analysed to identify trends and

patterns over time. As the plant underwent a major upgrade towards the end of the 2022–2023 reporting period, comparisons in this report focus on the past four reporting periods.

By analysing and comparing the past four years of influent and effluent data, potential annual and seasonal trends can be identified that may inform environmental performance. However, the small sample size may not capture natural variability and long-term patterns. As such, the statistical tests in this report are used to suggest possible patterns and trends, rather than provide conclusive evidence.

Watercare assesses compliance with the consent using the same compliance rating system used by Auckland Council (Table 3-1).

Table 3-2 Compliance assessment criteria

Rating	Detail
Category 1	Watercare has complied with the consent condition. Where a consent condition refers to a provision in a Management Plan, then the plan has been referred to in assessing consent compliance.
Category 2	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance as technical or having no more than minor adverse effect.
Category 3	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance having the potential to result in more than minor adverse effects on the environment. Alternatively, since the last audit, there is evidence of repeat Category 2 non-compliance.
Category 4	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance as having the potential to cause significant adverse effects on the environment. Alternatively, since the last audit, there is evidence of repeat Category 3 non-compliance.

4 RESULTS

4.1 Effluent volumes

Daily effluent discharge volumes and total daily rainfall for the 2025–2026 reporting period are presented in Figure 4-2 and Figure 4-3. The discharge limit of 5,500 m³/day was exceeded once, on 22 January 2026, when the daily flow was recorded as 5,859.0 m³. This occurred during a period of consistent heavy rainfall, when discharge was required to maintain safe levels in the settlement ponds. Overall, discharge peaks corresponded with prolonged heavy rainfall. Sustained wet-weather conditions contributed to the rolling 12-month average exceeding the 1,500 m³/day limit and remaining above this threshold from November to June of the reporting period (Figure 4-3). As a result, the discharge volume conditions were not fully compliant for this reporting period and were assessed as Category 2.

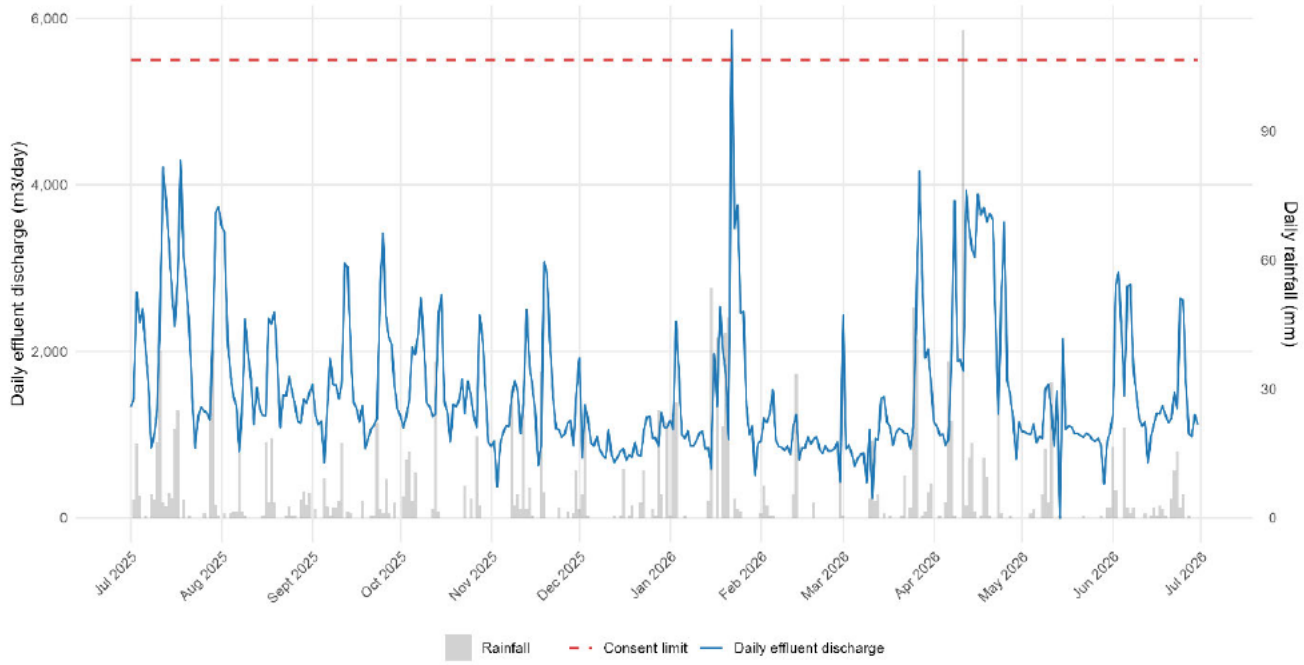

Figure 4-1 Helensville WWTP daily treated effluent discharge volumes and total daily rainfall for the 2025–2026 reporting period.

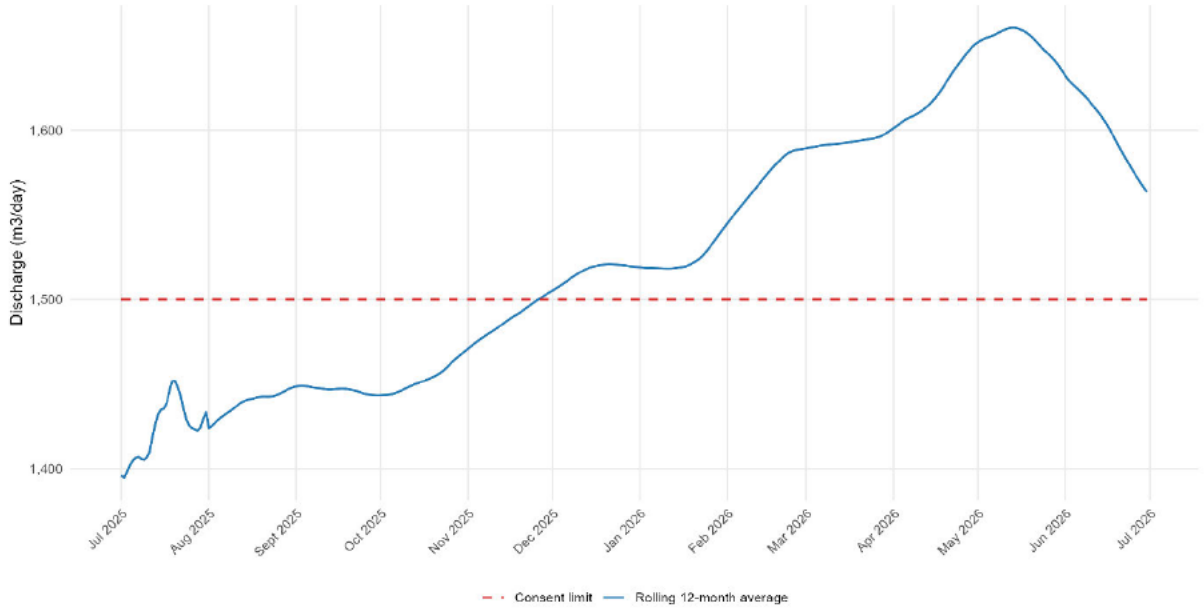

Figure 4-2 Helensville WWTP 12-month rolling average effluent discharge volumes for the 2025–2026 reporting period.

4.2 Influent and effluent quality

In line with Conditions 16 and 17 of the consent, discharge quality was monitored and assessed against the relevant standards. The WWTP was fully compliant with the consented effluent quality limits during the reporting period, indicating effective treatment performance. A summary of the 12 month rolling medians and 92nd percentiles for $cBOD_5$, TSS, *E. coli* and ammoniacal nitrogen is presented in Table 4-1. All water quality monitoring results are provided in Appendix B.

Table 4-1 Minimum, maximum and standard deviation of rolling median and 92nd percentile treated effluent parameters for the 2025–2026 reporting period

	$cBOD_5$ (g/m³)		TSS (g/m³)		*E. coli* (CFU/100 mL)		Ammonia (gN/m³)	
	Median	92%ile	Median	92%ile	Median	92%ile	Median	92%ile
Limit	20.00	30.00	20.00	35.00	50.00	100.00	15.00	25.00
Minimum	0.93	3.00	1.30	3.40	0.00	1.67	0.80	5.88
Maximum	1.40	4.16	2.80	5.92	1.60	12.45	1.50	13.84
Standard Dev	0.14	0.50	0.44	0.66	0.75	2.79	0.23	2.73

The ultrafiltration (UF) unit is a membrane filtration system that removes fine particles, bacteria, viruses and suspended solids from treated wastewater. To assess treatment performance, removal efficiencies for ammoniacal nitrogen, $cBOD_5$, TSS and total phosphorus were calculated and are presented in Table 4-2. Average removal exceeded 90% for three of the four parameters. Total phosphorus removal was lower, at 80.84%, but still indicated effective overall performance of the UF unit and the WWTP.

Table 4-2 Influent and effluent concentrations and removal efficiency at Helensville WWTP during the 2025–2026 reporting period

Parameter	Mean influent concentration	Mean effluent concentration	Performance (% removed)
Ammonia mg N/L	23	1.50	93.48

Parameter	Mean influent concentration	Mean effluent concentration	Performance (% removed)
$cBOD_5$ mg O_2/L	210	0.98	99.54
TSS mg/L	377	2.60	99.31
Total phosphorus[1] mg/L	8.64	1.66	80.84

4.2.1 Trends in nutrient concentrations and removal efficiencies

Influent nutrient data recorded since the WWTP upgrade show that ammonia concentrations varied seasonally, with the highest concentrations in summer and spring and the lowest concentrations in autumn and winter. Lower ammonia concentrations in winter may reflect increased rainfall-related dilution. In comparison, total phosphorus[1] concentrations showed limited seasonal variation over the same period (Figure 4-5).

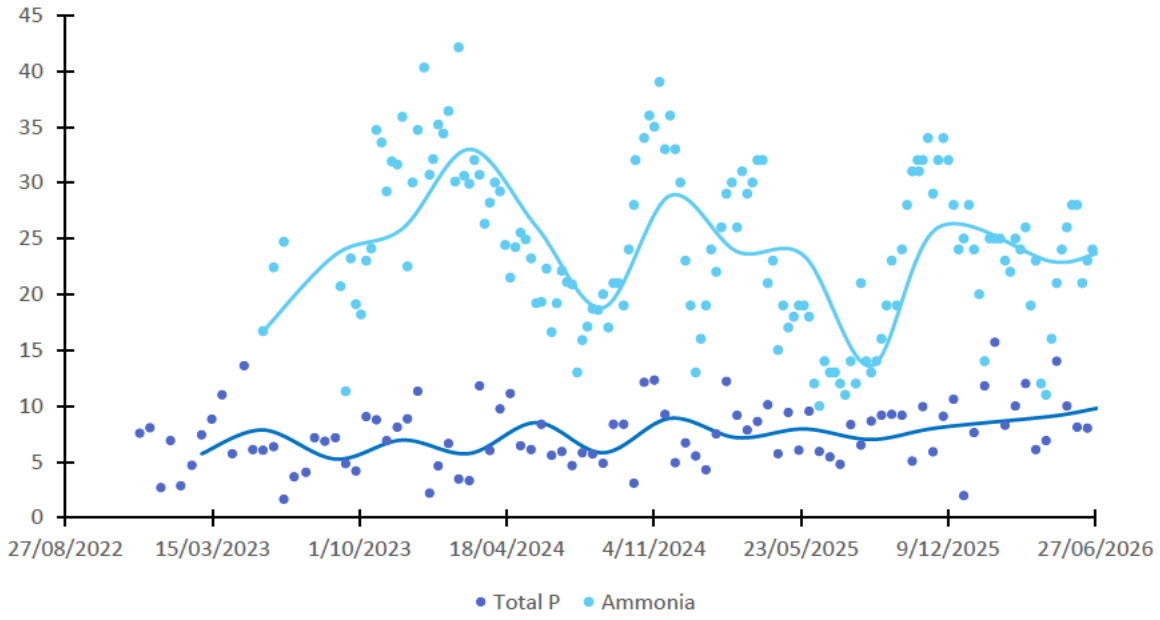

Figure 4-3 Nutrient concentrations of total phosphorus and ammoniacal nitrogen, with rolling averages shown as solid lines, for the WWTP influent

Because influent ammonia concentrations differed between summer and winter, nutrient removal efficiencies were compared for these seasons (Figure 4-6). Although influent total phosphorus concentrations did not vary greatly by season, phosphorus removal efficiency appeared higher in winter than in summer. Ammonia removal efficiency was more stable and was slightly higher in summer, when influent concentrations tended to be higher.

[1] Note the consent does not include a limit for total phosphorus

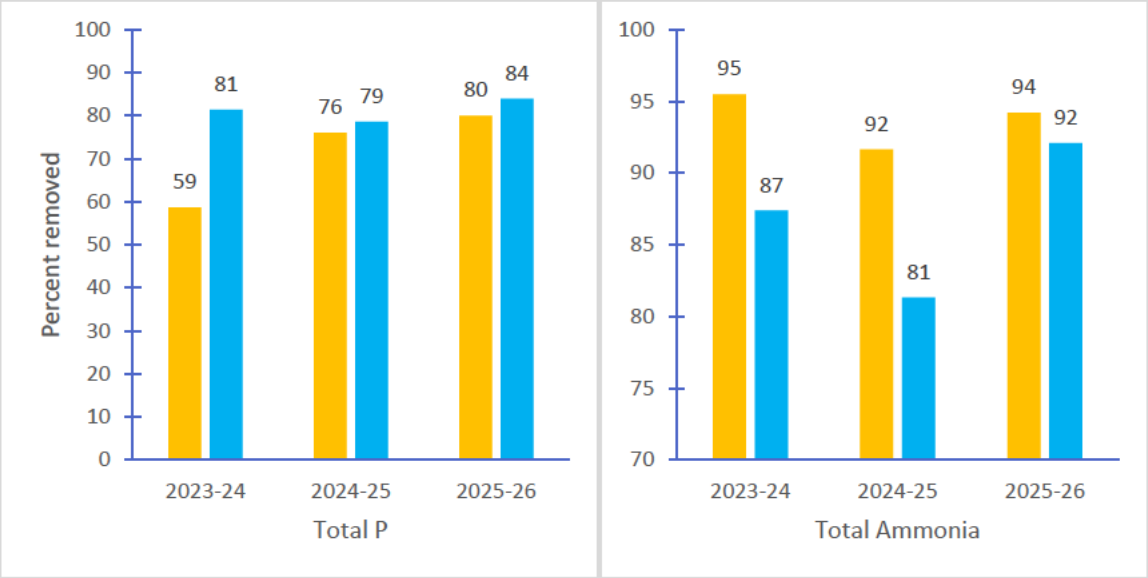

Figure 4-4 Variation in total phosphorus and ammonia removal rates between summer and winter seasons, with summer shown in orange and winter shown in blue

4.2.2 Patterns in microbial indicators

To support analysis of Enterococci and *E. coli*, monitoring data from the past four years have been visualised using box plots to highlight seasonal variation (Figure 4-7). Some higher results were excluded from the figure to improve readability and to better reflect underlying trends. The box plot indicates that autumn exhibits the greatest variability, with a wider range and higher concentrations of both microbial indicators compared with the other seasons. In contrast, summer, spring and winter show more stable patterns, with concentrations generally at the lower end of the scale. Operationally, this suggests that other seasonal factors affecting treatment performance may be contributing. Further review of autumn results against influent flow, water temperature, pond conditions, ultrafiltration loading and membrane performance may help identify whether the pattern reflects a recurring process response or isolated elevated results.

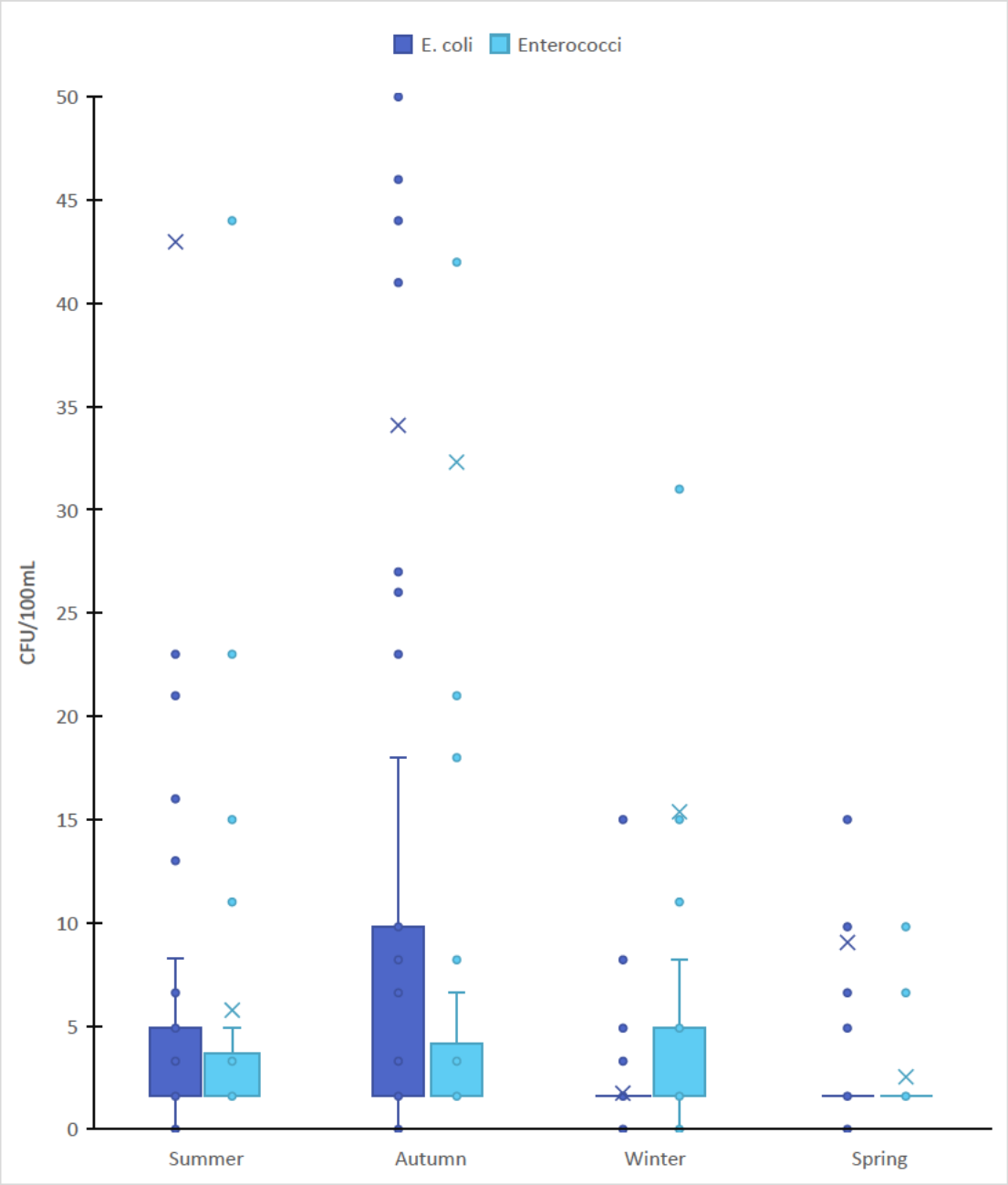

Figure 4-5 Box plot showing seasonal variability in enterococci and E. coli concentrations in treated-effluent samples collected over the past four years. The line within each box represents the median, × denotes the mean, and individual dots represent statistical outliers rather than all observations. Some extreme values have been excluded to improve readability.

4.3 Trace metals and additional parameters

In accordance with Condition 16, a suite of trace metals (arsenic, cadmium, copper, chromium, lead, zinc, nickel and mercury), additional nutrient parameters (nitrate, nitrite, and dissolved reactive phosphorus), viral indicators (adenovirus and enterovirus), and semi-volatile organic compounds (SVOCs) are monitored at the discharge point. The consent does not impose specific compliance limits for these parameters, but it does require ongoing monitoring to track trends and ensure that any potential accumulation of contaminants is detected.

Trace metals monitoring results for 2025–2026 (Appendix B) showed very low concentrations, well below relevant guideline thresholds. Nutrient results (nitrate, nitrite, DRP) demonstrated stable effluent concentrations with no evidence of upward trends. Bi-annual viral indicator monitoring undertaken on 1 July 2025 and 6 January 2026 returned results below detection (<0.5 No/10L for both Adenovirus and Enterovirus in July, and <1 No/10L for both in January).

Annual SVOC monitoring in 2025–2026 (Appendix B) also reported all analytes below detection limits. Compounds such as trichlorobenzenes, dichlorobenzenes, phenoxyacetic acids, dinitrotoluenes, chlorophenyl ethers, nitrosamines, and chlorinated hydrocarbons were all reported below 0.0015 mg/L. These results indicate no measurable accumulation of organic contaminants in the treated effluent.

Overall, no accumulation of contaminants of concern is evident in the discharge, and monitoring results confirm the effectiveness of treatment processes in maintaining effluent quality.

4.4 Long-term effluent flows

Trend analysis of daily effluent discharge data collected between June 2022 and August 2026 was undertaken using the Mann-Kendall and Seasonal Kendall tests. The Mann-Kendall test identified a statistically significant decreasing trend over the four-year period ($\tau = -0.163$, $Z = -8.13$, $p < 0.001$). A Seasonal Kendall test, which accounts for seasonal variation, also indicated an overall significant decreasing trend ($\tau = -0.107$, $Z = -5.33$, $p < 0.001$). Seasonal analysis showed significant decreasing trends during summer and spring, no significant trend during winter, and a significant increasing trend during autumn. Overall, the results indicate that effluent discharge has generally declined since 2022 despite some seasonal variation in trend direction.

The Pearson correlation test indicated a statistically significant positive relationship between effluent flow and rainfall ($p<0.05$) over the past four reporting periods. However, the correlation was weak (0.109), indicating that rainfall-related inflow and infiltration had a limited overall influence on effluent flow and was likely more influential during specific wet-weather conditions. This may reflect a threshold response, where short or light rainfall is largely absorbed by the ground, while prolonged heavy rainfall saturates the catchment and increases the influence of I&I on effluent flows.

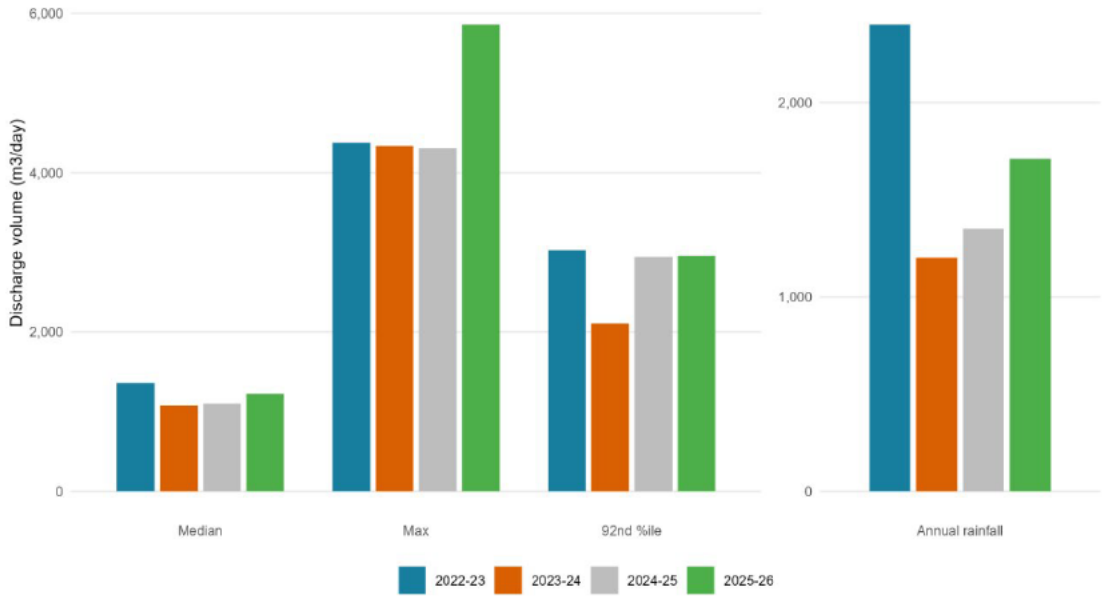

Figure 4-6 Daily flow rate patterns for the current and previous reporting periods since 2022, and total annual rainfall (in mm) for the three reporting periods.

Seasonal long-term variability in effluent volume is presented in Figure 4-4, with patterns generally following seasonal rainfall. Winter had the largest and most variable effluent discharge volumes, along with the highest total monthly rainfall. In spring and autumn, effluent volumes and variability decreased, with more consistent and lower rainfall. Summer had the lowest discharge volumes, despite rainfall being similar to spring. This pattern suggests some relationship between rainfall, inflow and infiltration, and effluent flow volumes, particularly following periods of increasing rainfall.

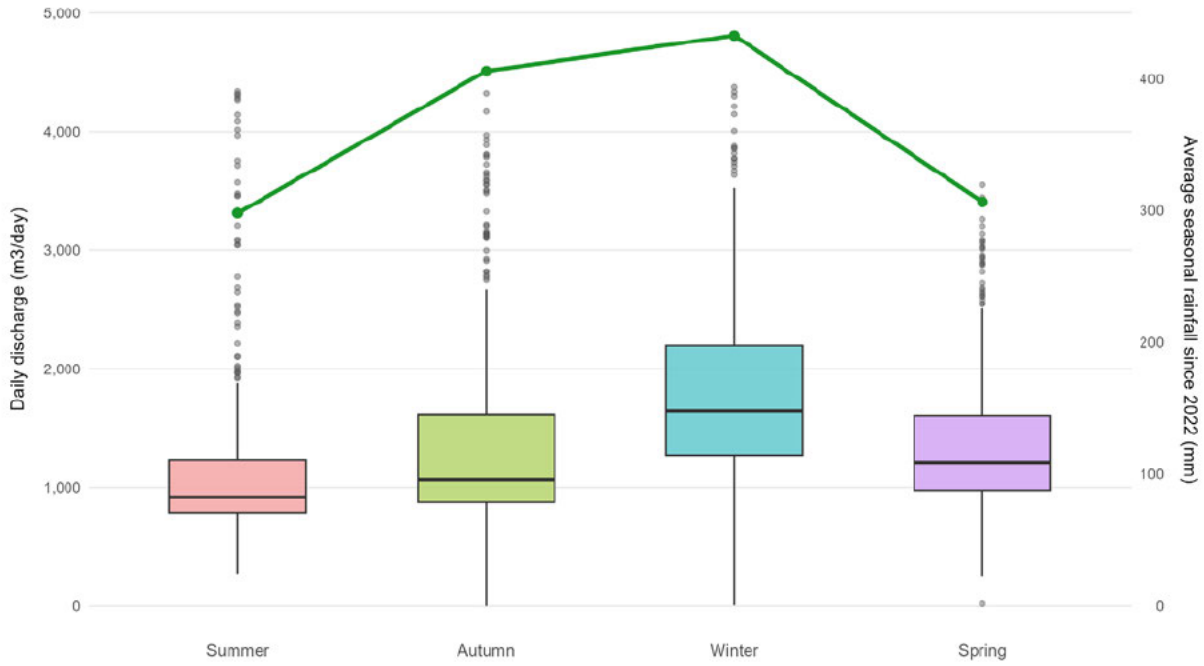

Figure 4-7 Box plots presenting seasonal variation in flow volumes from Helensville WWTP, with rainfall shown as a green line above the box plots, based on average total monthly rainfall since July 2022

4.5 Air quality and complaints

In line with Condition 44 and the Air Quality Management Plan, walkover inspections were conducted at least once each week. No strong odours were reported during these inspections. The six-monthly odour reports also did not record any strong odours, with weak odours detected twice during the January inspection. Copies of both odour reports are provided in Appendix C.

In addition, no complaints were reported against the WWTP during the reporting period.

5 CONCLUSION

The Helensville WWTP performed well during the 2025–2026 reporting period, with treated effluent quality remaining compliant with all relevant consented limits. The only non-compliance related to effluent discharge volume, where sustained wet-weather conditions caused the rolling 12-month average to exceed the consented limit and the daily discharge limit was exceeded once. This non-compliance was assessed as Category 2 because it was associated with wet-weather flow management and was not considered to have more than minor adverse effects.

The membrane aerated biofilm reactor and ultrafiltration units continued to support strong treatment performance, particularly for nutrient and solids removal. Seasonal trends in influent and effluent quality were observed, but these did not compromise effluent quality compliance or overall environmental performance. No incidents or odour complaints were reported during the reporting period.

Overall, the plant operated as a high-performing facility during the reporting period, with the focus for the next reporting period being continued management of wet-weather flows and progression of proposed catchment improvements. A condition-by-condition assessment of compliance is provided in Appendix D.

Appendix A. Effluent Volume Data

Date	Daily effluent discharge (m^3/day)
1/07/2025	1334.04
2/07/2025	1433.26
3/07/2025	2710.90
4/07/2025	2350.94
5/07/2025	2507.44
6/07/2025	2029.63
7/07/2025	1615.84
8/07/2025	842.07
9/07/2025	1000.67
10/07/2025	1289.62
11/07/2025	2538.29
12/07/2025	4213.36
13/07/2025	3817.34
14/07/2025	3280.95
15/07/2025	2743.82
16/07/2025	2306.46
17/07/2025	2878.03
18/07/2025	4298.88
19/07/2025	3136.72
20/07/2025	2779.57
21/07/2025	2225.98
22/07/2025	1400.58
23/07/2025	840.83
24/07/2025	1213.78
25/07/2025	1331.82
26/07/2025	1283.51
27/07/2025	1259.12
28/07/2025	1174.41
29/07/2025	2245.70
30/07/2025	3670.59
31/07/2025	3740.60
1/08/2025	3502.68
2/08/2025	3428.01
3/08/2025	2148.79
4/08/2025	1732.75
5/08/2025	1464.81
6/08/2025	1341.44
7/08/2025	790.88
8/08/2025	1389.26
9/08/2025	2384.85
10/08/2025	1989.04
11/08/2025	1662.80
12/08/2025	1124.43
13/08/2025	1564.03
14/08/2025	1310.38
15/08/2025	1230.20
16/08/2025	1223.36
17/08/2025	2393.03
18/08/2025	2321.70
19/08/2025	2477.74
20/08/2025	1892.81
21/08/2025	1088.29
22/08/2025	1473.33
23/08/2025	1469.93
24/08/2025	1697.20
25/08/2025	1525.47
26/08/2025	1366.61
27/08/2025	1157.30
28/08/2025	1134.50
29/08/2025	1427.53
30/08/2025	1378.62
31/08/2025	1514.46
1/09/2025	1604.57
2/09/2025	1243.25
3/09/2025	1123.49
4/09/2025	1158.98
5/09/2025	663.60
6/09/2025	1313.93
7/09/2025	1917.16
8/09/2025	1600.89
9/09/2025	1599.91
10/09/2025	1432.41
11/09/2025	1644.36
12/09/2025	3061.36
13/09/2025	3010.23
14/09/2025	2030.18
15/09/2025	1394.40
16/09/2025	1310.76
17/09/2025	1150.34
18/09/2025	1348.97
19/09/2025	832.90
20/09/2025	949.49
21/09/2025	1069.75
22/09/2025	1113.44
23/09/2025	1195.47
24/09/2025	2722.51
25/09/2025	3412.28
26/09/2025	2426.93
27/09/2025	2172.22
28/09/2025	2090.45
29/09/2025	1572.82
30/09/2025	1305.90
1/10/2025	1220.49
2/10/2025	1083.48
3/10/2025	1224.19
4/10/2025	1426.83
5/10/2025	2049.64
6/10/2025	1961.05
7/10/2025	2204.90
8/10/2025	2644.84
9/10/2025	2062.79
10/10/2025	1383.55
11/10/2025	1330.90
12/10/2025	1214.60
13/10/2025	1247.77
14/10/2025	2452.69
15/10/2025	2681.61
16/10/2025	1400.85
17/10/2025	1265.65
18/10/2025	915.69
19/10/2025	1368.93
20/10/2025	1332.67
21/10/2025	1419.82
22/10/2025	1663.24
23/10/2025	1256.56
24/10/2025	1637.64
25/10/2025	1474.53
26/10/2025	1225.01
27/10/2025	1086.35
28/10/2025	2443.00
29/10/2025	2134.85
30/10/2025	1533.58
31/10/2025	905.64
1/11/2025	862.70
2/11/2025	925.18
3/11/2025	376.74

Date	Daily effluent discharge (m^3/day)
4/11/2025	883.75
5/11/2025	1021.88
6/11/2025	1106.60
7/11/2025	1094.64
8/11/2025	1459.41
9/11/2025	1646.30
10/11/2025	1530.74
11/11/2025	1013.63
12/11/2025	1390.20
13/11/2025	2495.94
14/11/2025	1829.77
15/11/2025	1592.85
16/11/2025	1285.12
17/11/2025	624.60
18/11/2025	861.89
19/11/2025	3076.27
20/11/2025	2941.88
21/11/2025	2088.69
22/11/2025	1485.14
23/11/2025	1070.06
24/11/2025	1062.83
25/11/2025	971.05
26/11/2025	1004.18
27/11/2025	1135.96
28/11/2025	1173.66
29/11/2025	871.12
30/11/2025	1493.86
1/12/2025	1919.79
2/12/2025	723.48
3/12/2025	1360.83
4/12/2025	1180.78
5/12/2025	897.85
6/12/2025	868.84
7/12/2025	980.49
8/12/2025	820.47
9/12/2025	750.50
10/12/2025	715.86
11/12/2025	1058.62
12/12/2025	759.56
13/12/2025	664.30
14/12/2025	724.19
15/12/2025	800.04

Date	Daily effluent discharge (m^3/day)
16/12/2025	830.45
17/12/2025	690.95
18/12/2025	757.27
19/12/2025	729.86
20/12/2025	907.17
21/12/2025	753.39
22/12/2025	743.97
23/12/2025	1039.42
24/12/2025	1207.99
25/12/2025	1221.44
26/12/2025	961.52
27/12/2025	962.28
28/12/2025	862.62
29/12/2025	1269.07
30/12/2025	1086.91
31/12/2025	1088.97
1/01/2026	1169.22
2/01/2026	1064.84
3/01/2026	2358.04
4/01/2026	1696.92
5/01/2026	999.21
6/01/2026	958.62
7/01/2026	1045.15
8/01/2026	867.05
9/01/2026	867.94
10/01/2026	931.37
11/01/2026	1023.18
12/01/2026	1037.42
13/01/2026	828.51
14/01/2026	844.62
15/01/2026	589.06
16/01/2026	1969.52
17/01/2026	1334.38
18/01/2026	2536.10
19/01/2026	1990.67
20/01/2026	1724.42
21/01/2026	943.57
22/01/2026	5859.88
23/01/2026	3479.09
24/01/2026	3754.69
25/01/2026	2466.55
26/01/2026	2480.53

Date	Daily effluent discharge (m^3/day)
27/01/2026	1340.62
28/01/2026	1000.44
29/01/2026	1105.28
30/01/2026	509.53
31/01/2026	892.84
1/02/2026	927.38
2/02/2026	1195.19
3/02/2026	1147.34
4/02/2026	1258.31
5/02/2026	1537.07
6/02/2026	935.65
7/02/2026	860.66
8/02/2026	851.69
9/02/2026	807.79
10/02/2026	865.23
11/02/2026	766.78
12/02/2026	1096.21
13/02/2026	1237.65
14/02/2026	698.11
15/02/2026	843.88
16/02/2026	839.12
17/02/2026	972.70
18/02/2026	886.24
19/02/2026	951.23
20/02/2026	973.28
21/02/2026	818.92
22/02/2026	772.96
23/02/2026	868.45
24/02/2026	802.87
25/02/2026	804.95
26/02/2026	829.11
27/02/2026	911.79
28/02/2026	432.10
1/03/2026	2438.44
2/03/2026	827.87
3/03/2026	874.40
4/03/2026	762.59
5/03/2026	619.00
6/03/2026	715.01
7/03/2026	763.26
8/03/2026	774.08
9/03/2026	420.29

Date	Daily effluent discharge (m^3/day)
10/03/2026	1063.82
11/03/2026	235.01
12/03/2026	952.90
13/03/2026	935.37
14/03/2026	1435.41
15/03/2026	1456.24
16/03/2026	1148.63
17/03/2026	1095.74
18/03/2026	879.45
19/03/2026	1023.02
20/03/2026	1071.38
21/03/2026	1058.13
22/03/2026	1012.21
23/03/2026	1016.40
24/03/2026	832.68
25/03/2026	1134.00
26/03/2026	2583.77
27/03/2026	4168.27
28/03/2026	2928.08
29/03/2026	1922.02
30/03/2026	2027.58
31/03/2026	1628.09
1/04/2026	1141.41
2/04/2026	1103.70
3/04/2026	988.11
4/04/2026	1009.36
5/04/2026	874.33
6/04/2026	945.61
7/04/2026	1986.20
8/04/2026	3809.53
9/04/2026	1884.34
10/04/2026	1901.37
11/04/2026	1763.40
12/04/2026	3930.62
13/04/2026	3498.09
14/04/2026	3216.38
15/04/2026	3134.08
16/04/2026	3886.80
17/04/2026	3641.81
18/04/2026	3723.46
19/04/2026	3555.00
20/04/2026	3657.39
21/04/2026	3585.95
22/04/2026	2362.21
23/04/2026	1248.03
24/04/2026	2670.15
25/04/2026	3551.90
26/04/2026	1646.85
27/04/2026	1472.59
28/04/2026	1195.63
29/04/2026	700.78
30/04/2026	1150.85
1/05/2026	1042.00
2/05/2026	1031.34
3/05/2026	1010.41
4/05/2026	1008.28
5/05/2026	1125.66
6/05/2026	905.99
7/05/2026	980.89
8/05/2026	958.10
9/05/2026	1542.16
10/05/2026	1608.47
11/05/2026	1328.41
12/05/2026	867.88
13/05/2026	1525.81
14/05/2026	0.32
15/05/2026	2148.38
16/05/2026	1062.07
17/05/2026	1104.49
18/05/2026	1093.80
19/05/2026	1012.37
20/05/2026	1018.12
21/05/2026	988.20
22/05/2026	968.99
23/05/2026	1019.09
24/05/2026	998.34
25/05/2026	943.26
26/05/2026	922.26
27/05/2026	952.59
28/05/2026	870.62
29/05/2026	411.19
30/05/2026	903.69
31/05/2026	1021.34
1/06/2026	1229.36
2/06/2026	2793.87
3/06/2026	2955.64
4/06/2026	2223.62
5/06/2026	1469.03
6/06/2026	2782.96
7/06/2026	2804.81
8/06/2026	1807.97
9/06/2026	1487.73
10/06/2026	1198.02
11/06/2026	1103.60
12/06/2026	1155.37
13/06/2026	657.64
14/06/2026	978.75
15/06/2026	1116.31
16/06/2026	1257.68
17/06/2026	1249.86
18/06/2026	1345.53
19/06/2026	1234.51
20/06/2026	1139.58
21/06/2026	1195.43
22/06/2026	1508.25
23/06/2026	1309.60
24/06/2026	2639.72
25/06/2026	2616.01
26/06/2026	1620.35
27/06/2026	1011.39
28/06/2026	975.96
29/06/2026	1236.18
30/06/2026	1119.40

Appendix B. Effluent Quality Data

Fortnightly and monthly discharge quality sampling conducted during the 2025-2026 reporting period

Date	Total P (g/m3)	DRP (g/m3)	Chloride (g/m3)	Nitrate-N (g/m3)	Nitrite-N (g/m3)	Ammoniacal-N (gN/m3)	$cBOD_5$ (g/m3)	TSS (g/m3)	*E. coli* (CFU/100 ml)	Enterococci (CFU/100 ml)
Sampling frequency	**Monthly**					**Fortnightly**				
1/07/2025	1.04	0.795	129	14.2	0.11	0.26	0.59	4.6	0.00	0
8/07/2025						0.35			0.00	0
15/07/2025						2.2	1.9	1.6	0.00	0
22/07/2025						0.47			1.60	1.6
29/07/2025						1.5	1.6	0	0.00	0
5/08/2025	0.64	0.608	114	12.1	0.03	0.35	0	0	0.00	0
12/08/2025						0.32	0.81	2.8	0.00	0
19/08/2025						2.3			0.00	0
26/08/2025						0.41	3.1	4.6	0.00	0
2/09/2025	0.702	0.679	192	15.4	0.12	0.28	0.73	4	0.00	0
9/09/2025						0.8	1.4	5.4	0.00	0
16/09/2025						1.6			0.00	0
23/09/2025						5.9	3.8	2.8	1.60	1.6
30/09/2025						3.7			0.00	0
7/10/2025	1.71	1.64	131	12.9	0.3	11	2.8	0	0.00	0
14/10/2025						17			0.00	0
21/10/2025						16	6.7	6.4	0.00	0

28/10/2025						26			0.00	0
4/11/2025	1.57	1.5	144	16.7	1.26	6.1	0.9	3.2	4.90	4.9
11/11/2025						13			0.00	0
18/11/2025						14	4.5	4.8	0.00	0
25/11/2025						4.3			0.00	0
2/12/2025	2.69	2.45	146	23.6	4.72	3.4	4.4	2	0.00	0
9/12/2025						9.3			2100.00	2100
16/12/2025								2	0.00	0
16/12/2025						0.48	0			
23/12/2025						1.1			4.90	4.9
30/12/2025						4.7	0.75	3.4	8.30	8.3
6/01/2026	1.95	1.7	184	21	0.15	1.6	0.95	2.2	0.00	0
13/01/2026						0.83	1.2	1	3.30	3.3
20/01/2026						1.3			0.00	0
27/01/2026						2.3	2.1	1.2	0.00	0
3/02/2026	2.09	2	169	23.9	0.19	0.6	1.7	2.8	3.30	3.3
10/02/2026						0.31	0.81	3.6	0.00	0
17/02/2026						0.65			4.90	4.9
24/02/2026						0.16	0.73	1.2	0.00	0
3/03/2026	1.5	1.59	384	23.1	0.07	0.24	0	1.2	0.00	0
10/03/2026						0.46	0.6	3.4	1.60	1.6
17/03/2026						0.17			0.00	0

24/03/2026						0.1	0.64	11	0.00	0
31/03/2026						0.39			0.00	0
7/04/2026	1.6	1.4	233	17.8	1.04	4.1	1.3	3.2	0.00	0
14/04/2026						3.3			1.70	1.7
21/04/2026						4	0.9	0	0.00	0
28/04/2026						0.21			0.00	0
5/05/2026	2	1.8	143	23.4	0.14	0.27	0.93	2.8	0.00	0
12/05/2026						8.2			1.70	1.7
19/05/2026						0.37	1	1.8	0.00	0
26/05/2026						0.7			0.00	0
2/06/2026	1.9	1.9	172	8.08	0.31	19	1.5	2.4	0.00	0
9/06/2026						4.9			0.00	0
16/06/2026						1.8	0.76	1.1	1.60	1.6
23/06/2026						4.3			0.00	0
30/06/2026						1	1.2	1.2	0.00	0

Rolling median and 92nd percentile figures for $cBOD_5$, total suspended solids and ammonia for the 2025-26 reporting period

	$cBOD_5$ (g/m3)			TSS (g/m3)			*E. coli* (CFU/100 ml)			Ammonia (gN/m3)		
	Raw	Median	92% ile	Raw	Median	92%ile	Raw	Median	92%ile	Raw	Median	92%ile
Date		(limit 20)	(limit 30)		(limit 20)	(limit 35)		(limit 50)	(limit 100)		(limit 15)	(limit 25)
1/07/2025	0.59	1.25	3.00	4.6	1.30	3.40	0.00	1.60	1.70	0.26	1.25	7.51
8/07/2025		1.30	3.00		1.40	3.40	0.00	1.60	1.70	0.35	1.16	7.51
15/07/2025	1.9	1.30	3.00	1.6	1.40	3.40	0.00	1.60	1.70	2.20	1.25	7.51
22/07/2025		1.30	3.00		1.40	3.40	1.60	1.60	1.70	0.47	1.16	7.33
29/07/2025	1.6	1.30	3.00	0	1.40	3.40	0.00	1.60	1.70	1.50	1.16	7.33
5/08/2025	0	1.30	3.00	0	1.40	3.40	0.00	1.60	1.70	0.35	1.11	7.33
12/08/2025	0.81	1.30	3.00	2.8	1.40	3.40	0.00	1.60	1.70	0.32	1.05	7.33
19/08/2025		1.30	3.00		1.40	3.40	0.00	1.60	1.70	2.30	1.15	7.33
26/08/2025	3.1	1.30	3.02	4.6	1.40	3.64	0.00	1.60	1.70	0.41	1.05	7.26
2/09/2025	0.73	1.30	3.02	4	1.50	4.12	0.00	1.60	1.70	0.28	0.97	7.26
9/09/2025	1.4	1.30	3.00	5.4	1.60	4.60	0.00	1.60	1.70	0.80	0.87	7.17
16/09/2025		1.30	3.00		1.60	4.60	0.00	1.60	1.70	1.60	0.87	7.17
23/09/2025	3.8	1.30	3.02	2.8	1.60	4.60	1.60	1.60	1.70	5.90	0.87	5.88
30/09/2025		1.30	3.03		1.60	4.60	0.00	1.60	1.70	3.70	0.87	5.88
7/10/2025	2.8	1.40	3.03	0	1.60	4.60	0.00	1.60	1.70	11.00	0.87	7.19
14/10/2025		1.35	3.04		1.60	4.60	0.00	1.60	1.68	17.00	0.80	7.33
21/10/2025	6.7	1.40	3.13	6.4	1.60	4.82	0.00	1.60	1.67	16.00	0.87	10.18
28/10/2025		1.35	3.14		1.60	4.89	0.00	1.60	1.67	26.00	0.87	11.76
4/11/2025	0.9	1.30	3.13	3.2	1.60	4.82	4.90	1.60	3.88	6.10	0.87	11.76
11/11/2025		1.30	3.14		1.60	4.89	0.00	1.60	3.88	13.00	0.87	12.76
18/11/2025	4.5	1.30	3.37	4.8	1.60	4.97	0.00	1.60	3.88	14.00	0.87	13.76
25/11/2025		1.30	3.42		1.60	5.02	0.00	1.60	3.88	4.30	0.87	13.76
2/12/2025	4.4	1.30	3.97	2	1.60	4.97	0.00	1.60	3.88	3.40	1.02	13.76
9/12/2025		1.30	4.02		1.70	5.02	2100.00	1.60	12.45	9.30	1.07	13.76
16/12/2025		1.30	4.02	2	1.80	4.97	0.00	1.60	12.45		0.93	12.84
16/12/2025	0	1.30	3.97		1.80	4.97		1.60	12.45	0.48	0.87	12.76
23/12/2025		1.25	4.02		1.80	5.02	4.90	1.60	12.45	1.10	0.87	12.76
30/12/2025	0.75	1.20	3.97	3.4	1.80	4.97	8.30	1.60	7.21	4.70	0.87	12.76
6/01/2026	0.95	1.20	3.97	2.2	1.80	4.97	0.00	1.60	7.21	1.60	1.02	12.76
13/01/2026	1.2	1.20	3.97	1	1.80	4.97	3.30	1.60	4.90	0.83	1.02	12.76
20/01/2026		1.20	4.02		1.90	5.02	0.00	1.60	4.90	1.30	1.15	12.76
27/01/2026	2.1	1.20	3.97	1.2	1.80	4.97	0.00	1.60	4.39	2.30	1.20	12.68
3/02/2026	1.7	1.20	3.97	2.8	2.00	4.97	3.30	1.60	4.39	0.60	1.20	12.68
10/02/2026	0.81	1.20	3.97	3.6	2.00	4.97	0.00	1.60	4.39	0.31	1.20	12.68
17/02/2026		1.20	4.06		2.00	5.06	4.90	1.60	4.90	0.65	1.25	12.76
24/02/2026	0.73	1.20	4.02	1.2	2.00	5.02	0.00	1.60	4.90	0.16	1.25	12.76
3/03/2026	0	1.20	4.02	1.2	2.00	5.02	0.00	0.80	4.90	0.24	1.25	12.76
10/03/2026	0.6	1.20	4.06	3.4	2.00	5.06	1.60	0.00	4.90	0.46	1.30	12.84
17/03/2026		1.20	4.11		2.10	5.11	0.00	0.00	4.90	0.17	1.30	12.84
24/03/2026	0.64	1.20	4.06	11	2.20	5.84	0.00	0.00	4.90	0.10	1.30	12.84
31/03/2026		1.08	4.11		2.50	5.92	0.00	0.00	4.90	0.39	1.30	12.84

7/04/2026	1.3	1.08	4.11	3.2	2.50	5.92	0.00	0.00	4.90	4.10	1.40	12.84
14/04/2026		0.95	4.16		2.20	5.16	1.70	0.00	4.90	3.30	1.50	12.84
21/04/2026	0.9	0.93	4.11	0	2.10	5.11	0.00	0.00	4.90	4.00	1.50	12.84
28/04/2026		0.95	4.16		2.20	5.16	0.00	0.00	4.64	0.21	1.50	12.84
5/05/2026	0.93	0.94	4.11	2.8	2.50	5.11	0.00	0.00	4.64	0.27	1.40	12.84
12/05/2026		0.95	4.16		2.80	5.16	1.70	0.00	4.64	8.20	1.50	12.84
19/05/2026	1	0.98	4.11	1.8	2.50	5.11	0.00	0.00	4.64	0.37	1.50	12.84
26/05/2026		0.95	4.16		2.80	5.16	0.00	0.00	4.64	0.70	1.30	12.84
2/06/2026	1.5	0.98	4.11	2.4	2.60	5.11	0.00	0.00	4.64	19.00	1.30	13.84
9/06/2026		1.00	4.16		2.80	5.16	0.00	0.00	4.64	4.90	1.30	13.84
16/06/2026	0.76	0.98	4.11	1.1	2.60	5.11	1.60	0.00	4.64	1.80	1.50	13.84
23/06/2026		0.95	4.16		2.80	5.16	0.00	0.00	4.64	4.30	1.50	13.84
30/06/2026	1.2	0.98	4.11	1.2	2.60	5.11	0.00	0.00	4.64	1.00	1.50	13.84

Bi-annual viral indicator results from the 2025-26 reporting period

Date	Adenovirus (No/10L)	Enterovirus (No/10L)
1/07/2025	<0.5	<0.5
6/01/2026	<1.0	<1.0

Annual trace metal results from the 2025-26 reporting period

Trace Metal	Dissolved (mg/L)	Total (mg/L)
Arsenic	0.0038	0.0039
Cadmium	<0.00005	<0.00005
Chromium	<0.0005	0.00068
Copper	0.00057	0.00066
Lead	<0.0001	<0.0001
Mercury	<0.00005	<0.00005
Nickel	0.0011	0.0012
Zinc	0.005	0.0061

Annual semi-volatile organic compound results from the 2025-26 reporting period

SVOC	Concentration in mg/L
1,2,4-Trichlorobenzene	<0.0005
1,2-Dichlorobenzene	<0.0005
1,3-Dichlorobenzene	<0.0005
1,4-Dichlorobenzene	<0.0005
2,4,5-Trichlorophenoxyacetic acid	<0.0001

SVOC	Concentration in mg/L
2,4-Dichlorophenoxyacetic acid (2,4-D)	<0.0001
2,4-Dinitrotoluene	<0.0005
2,6-Dinitrotoluene	<0.0015
2-Chloronaphthalene	<0.0002
2-Methylnaphthalene	<0.0002

SVOC	Concentration in mg/L
4-(2,4-Dichlorophenoxy) butanoic acid	<0.0001
4-Bromophenylphenyl ether	<0.001
4-Chlorophenylphenyl ether	<0.001
Bentazone	<0.0001
Bis(2-chloroethoxy) methane	<0.0015
Bis(2-chloroethyl) ether	<0.0015
Bis(2-chloroisopropyl) ether	<0.0015
Carbazole	<0.0005
Dibenzofuran	<0.0005
Dicamba	<0.0001
Dichlorprop	<0.0001
Dinoseb	<0.0001
Diphenylhydrazine	<0.001
Fenoprop (Silvex)	<0.0001

SVOC	Concentration in mg/L
Hexachlorobenzene	<0.0005
Hexachlorobutadiene	<0.0005
Hexachlorocyclopentadiene	<0.0005
Hexachloroethane	<0.0005
Isophorone	<0.0005
Lontrel	<0.0001
MCPA	<0.0001
MCPB	<0.0001
Mecoprop (MCPP)	<0.0001
Nitrobenzene	<0.001
N-Nitrosodi-n-propylamine	<0.0015
N-Nitrosodiphenylamine	<0.0005
Picloram	<0.0001
Triclopyr	<0.0001

Appendix C. Odour Reports

Bi-annual odour reports

Date: 02 July 2025 Time: 11:00 **Wind Strength:** 20 km/h	**Wind Direction: NW**
Person: Hayley Ashman	**Weather Conditions: Cloudy**

Time	Location of odour[1]	Odour source	Strength	Description	Duration	Comments
11:00	A	Primary Works (Screen) / UF area	0			No Odour Detected
11:05	B	Pond 1 Influent area	0			No Odour Detected
11:10	C	MABR area	0			No Odour Detected
11:15	D	Pond 1 SW Corner	0			No Odour Detected
11:20	E	Ponds 1 & 2 West	0			No Odour Detected
11:25	F	Pond 2 NW	0			No Odour Detected
11:30	G	Ponds 2 & 1 East	0			No Odour Detected

Odour detected at neighbour boundary? No

Date: 28 January 2026 Time: 15:00 **Wind Strength:** 14 km/h	**Wind Direction: NW**
Person: Mai Hoque	**Weather Conditions: Clear / Sunny**

Time	Location of odour[1]	Odour source	Strength	Description	Duration	Comments
	A	Primary Works (Screen) / UF area	0			
	B	Pond 1 Influent area	0			
	C	MABR area	1	Dead rat	<1 min	Localized
	D	Pond 1 SW Corner	1	Salty, raw sewage	<1 min	Waft
	E	Ponds 1 & 2 West	0			
	F	Pond 2 NW	0			
	G	Ponds 2 & 1 East	0			

Odour detected at neighbour boundary? No


F
G
E
Helensville Wastewater Treatment Plant
A
B
C
D

Appendix D. Compliance Commentary

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
01	The discharges of contaminants shall be carried out in accordance with the plans and information submitted with the application, including SEE CONSENT PDF FOR REST OF CONDITION.	1	
02	Pursuant to section 116 of the Act, these consents (or any part thereof) shall not commence until such time as all charges pursuant to section 36, owing at the time this decision is notified are paid to the Council in full.	1	
03	The servants or agents of the Council shall be permitted to have access to the relevant parts of the property at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements or take samples white adhering to the consent holder's health and safety polices.	1	
04	Consents 22225 and 37541 shall expire 15 years after the date of commencement.	1	Consent expires 2027
05.1.1	The consent holder shall ensure that the discharge volume does not exceed the following limit: Annual Average Flow (average over any consecutive 12-month period) of up to 1,500 m' /day	2	Limit breached from November
05.1.2	The consent holder shall ensure that the discharge volume does not exceed the following limit: 5.1.2 Maximum Daily Flow of up to 5,500 m^3/day.	2	Limit breached on one occasion
06	The consent holder shall discharge treated wastewater flows from the Helensville WWTP into the Kaipara River as follows: SEE CONSENT PDF FOR TABLE OF REQUIREMENTS.	1	
07	The consent holder shall ensure that when there are any of the following problems within any six month period: • with the plant maintaining the BOD5 and NH3 levels in the discharge within the limits specified in condition 17; and/or • with three monthly average DO in Pond 1 less than 2mgO/l; and/or • with the six monthly average effluent BOD5 exceeding 20mgO/l ; and/or • with the six monthly average effluent ammonia exceeding> 20mgN/l. steps are taken by the consent holder within six months to improve the quality of the discharge to the satisfaction of the Manager.	1	

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
08	The design and installation of all new system components shall be carried out under the supervision of a chartered professional engineer or other appropriately qualified person experienced in the design and installation of wastewater treatment systems. The supervising engineer/person shall inspect all the new works (as they are completed) and shall certify in writing to the Manager that all additional components of the wastewater treatment system have been designed, inspected and installed in accordance with standard engineering practice and with the plans provided pursuant to condition 1 and any other plans or specifications required by the conditions of consent. This certification shall be carried out within three months of the installation of the UF unit and separately within three months of the permanent installation of the five new aerators into Ponds 1 and 2.	1	The most recent as-built drawings and engineering certificates were sent to Auckland Council on 18 August 2024.
09	Within three months of the commissioning of the new UF unit, the consent holder shall submit an updated 'as-built' general plant layout plan for the upgraded treatment system to the Council with the certification required by condition 8, showing on the plan the location of all existing and new key components of the treatment system.	1	The as-built drawings for the U/F plant together with a letter from GE certifying the plant were sent to AC in March 2016
10	The consent holder shall ensure that 24 hours a day, seven days a week electronic monitoring systems are installed and maintained to operate in the event of any pump failure or any mechanical failure of the UF unit.	1	An electronic monitoring system in place

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
11	The consent holder shall prepare a Management Plan for the wastewater treatment and discharge system to enable compliance with the conditions of this consent to ensure that any adverse effects on the environment are minimised. The Management Plan shall be in accordance with the conditions of this consent and shall cover the following: • Reticulated Area - detailing the current and proposed future reticulated area of the Helensville and Parakai townships; • Plant Operation - specifications of the discharge regime which must cover how the discharge from the ponds will be managed to ensure compliance with consent conditions; • Inspection and Maintenance - outlining the practices and procedures with respect to inspection and maintenance to be adopted to ensure compliance with the conditions of consent; • Effluent and Receiving Environment Monitoring and Reporting - outlining the practices and procedures to be adopted with respect to monitoring and reporting 10 demonstrate on-going compliance with the conditions of consent; and • Contingency Plans - outlining the practices and procedures to be adopted with respect to contingency and incident response planning in order to avoid non-compliance with conditions of consent. The Management Plan shall be prepared under the supervision of an engineer or other person experienced in wastewater engineering for the wastewater treatment and disposal system and shall be submitted to the Council within three months of the commencement of this consent for the Manager's review and feedback.	1	Operations Management Plan approved by Auckland Council November 2023
12	The consent holder shall comply with the requirements of the Management Plan required by condition 11 once it has been approved. All subsequent significant updates to the plan throughout the term of this consent shall be submitted to the Manager for approval.	1	Ongoing
13	The consent holder shall maintain a register of the authorised trade waste connections to the Helensville WWTP and shall provide a copy of the updated register with the annual report required by condition 34.	1	Ongoing
14	The consent holder shall ensure flow meters are maintained in place to measure the total inflow to the WWTP and the total discharge volume from the system into the Kaipara River continuously. The discharge volume meter must be maintained to ensure an accuracy of plus or minus 5 percent.	1	Discharge volume meter in place and maintained accordingly

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
15	The consent holder shall collect and keep data of the daily rainfall levels in the vicinity of Helensville WWTP or at an alternative location that provides representative indications of rainfall levels at the Kaipara River at the discharge location. This data shall be made available to the Manager on request.	1	Ongoing
16	The consent holder shall collect monitoring data and samples from the outlet of the tidal storage pond and shall record and analyse the samples for the following parameters, to the required detection limits and at the specified frequency: SEE CONSENT PDF FOR TABLE OF REQUIREMENTS	1	Monitoring conducted accordingly for all parameters.
17	The consent holder shall ensure that the quality of the wastewater discharged is equal to or better than the following parameter concentrations in relation to the time periods specified: SEE CONSENT PDF FOR TABLE OF REQUIREMENTS	1	
18	The consent holder shall ensure that the samples required by condition 16 are collected and analysed in accordance with the 22nd edition of "Standard Methods for the Examination of Water and Wastewater" (Standard Methods) published by the American Public Health Association (APHA), the Water Environment Federation (WEF), and the American Water Works Association (Awa) or any subsequent edition or equivalent as may be approved in writing by the Manager.	1	Ongoing
19	The consent holder shall maintain a visual and photographic record of both the direct discharge point into the Kaipara River and also the Kaipara River to 1,000 metres downstream of the outfall, with records being collected on an annual basis and where practical at the same frequency of the receiving environment water quality monitoring required by conditions 20 to 29 unless written approval is first obtained from the Manager to reduce the number of samplings. Records shall be taken of the intertidal areas and the river itself when discharge is taking place and the tide is below mid· tide, at the discharge location and then at 100m, 200m, 400m and 1000m below the discharge. These records shall be provided in the Annual Report required by condition 34.	1	The environment monitoring was undertaken in November 2020 and January and April 2021. Additional routine water quality monitoring was started in February 2022.

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
20	The consent holder shall establish a series of monitoring sites upstream and downstream of the Helensville WWTP discharge. Three water samples shall be collected one hour after the discharge commences, or an alternative time approved by the manager, across a transect at each of the following locations: i. A site at least 100m upstream of the discharge point; ii. A site 100m downstream of the discharge point; iii. A site 400m downstream of the discharge point; and iv. A site 1000m downstream of the discharge point.	1	
21	The consent holder shall ensure that the monitoring required by condition 20 is conducted once prior to 15 March 2014 and once again following this date and before 1 June 2015, and subsequently on a 3 yearly basis, each covering three sampling rounds between November and March, unless written approval is first obtained from the Manager to defer the sampling and/or reduce the number of samplings. If in the opinion of the Manager, the evaluation of results of any three sampling rounds indicates that either the discharge plume has not been captured or that the variability of results does not permit a scientifically meaningful evaluation of data, two additional sampling rounds shall be carried out in April and May. Results of the first three sampling rounds shall be provided in the quarterly report submitted on 31 March required by condition 33, so that decisions about the need for the additional two rounds of monitoring can be made.	1	The last round of monitoring was completed in March 2024. The next round of monitoring is scheduled for November 2026-March 2027.
22	The consent holder shall ensure that on each monitoring occasion required by condition 21, the person(s) undertaking the sampling record the following conditions: i. The weather conditions on the day of sampling and the week prior; ii. The effluent discharge quality, the discharge volume, discharge rate and discharge timing on the day of sampling; iii. The high tide times in the Kaipara River mouth area on the day of sampling and tide characteristics (i.e. neap or spring); and iv. The time of sampling in relation to the commencement of discharge release at each sampling site, to ensure standardisation of results.	1	

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
23	The consent holder shall ensure that the water samples collected in accordance with condition 20 are collected from near surface starting at the upstream station, one hour after commencement of the discharge. The timing and location of samples taken downstream shall be representative of the discharge plume as it moves down the Kaipara River.	1	
24	The water samples required by condition 20 are to be analysed in the laboratory for the following parameters: SEE CONSENT PDF FOR LIST OF REQUIREMENTS	1	
25	The consent holder shall ensure that the samples collected in accordance with condition 20 shall be collected and analysed in accordance with the 22nd edition of the "Standard Methods for the Examination of Water and Wastewater" (APHA, AWWA and WEF) or any subsequent edition or equivalent as may be approved in advance and in writing by the Manager.	1	
26	The consent holder shall carry out microbiological monitoring of shellfish at the Kaipara River mouth on the same occasions as for receiving environment water quality monitoring (condition 20) unless written approval is first obtained for the Manager to defer the sampling and/or reduce the number of samplings. Five replicate shellfish samples shall be taken on each occasion and analysed for E. coli and on the first occasion adenoviruses and, if detected, on the second.	1	
27	The consent holder shall carry out sediment and intertidal/subtidal ecological monitoring at one station upstream and two stations (400m and 1000 m) downstream of the WWTP discharge in December 2014 and in December 2018. If in the opinion of the Manager, the evaluation of results of sampling carried out in 2014 and 2018 indicates that the variability of results does not permit a scientifically meaningful evaluation of data, an additional sampling round shall be carried out in 2021.	1	Sediment and ecological monitoring were sent to Auckland Council in 2023 and have been repeated in summer 2025-2026.
28	The consent holder shall ensure that the sampling protocols, including the number of replicates taken at each site, and the methods for processing and analysis is consistent with similar protocols adopted by the Council for "State of the Environment" monitoring purposes, to ensure integration and comparability of monitoring results.	1	

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
29	The consent holder shall ensure that analysis of sediment samples required by condition 28 includes sediment composition, concentrations of total organic carbon, nitrogen and phosphorus, as well as total recoverable copper, lead and zinc.	1	
30	Within five years of the commencement of this consent the consent holder shall reevaluate the contribution of nutrients and microbiological contaminants from the WWTP discharge to the Kaipara River and lower part of the southern Kaipara Harbour and related effects where these can be assessed. This review shall take account of updated monitoring information on the discharge, the Receiving Environment Water Quality Monitoring (conditions 20 - 29), State of the Environment monitoring conducted by the Council in the Kaipara Harbour, as well as changing circumstances in the upstream catchment (including removal of the Kumeu-Huapai wastewater scheme or new Council requirements for catchment management). This review shall also address the need or otherwise of an updated public health risk assessment, nutrient removal by the WWTP or other relevant upgrades. The results of this review shall be submitted to the Manager by 31 March 2016.	1	Helensville WWTP Environment Review completed by AECOM New Zealand Limited in June 2017
31	If regular inspections and observations of the discharge pipe indicate deficiencies in its performance or integrity, or if environmental monitoring indicates a need to improve the dilution and dispersion of the discharge in the receiving environment, the consent holder shall explore the options for replacing the current discharge pipe, with the aim of minimising any adverse effects of the structure and the discharge on the receiving environment.	1	No such observations made
32	In the event of two consecutive results for any single parameter (of samples collected in accordance with condition 16) not complying with the parameters specified in condition 17, the consent holder shall as soon as practicable of receipt of the second result notify the Manager of the exceedance in writing, outline the mitigation measures taken, and advise any further measures proposed to ensure compliance. If so, instructed by the Manager, the consent holder shall increase the frequency of monitoring for that parameter to weekly for a specified period.	1	

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
33	The consent holder shall ensure that the results of the monitoring undertaken in accordance with conditions 14 to 15(discharge flows and rainfall) and condition 17(discharge quality) are reported to the Manager quarterly within 20 working days of the period ending 31 December, 31 March, 30 June and 30 September each year.	1	Quarterly reports submitted to Auckland Council
34	The consent holder shall prepare an Annual Report and provide it to the Manager by 30 September each year. The Annual Report is to cover: i. A summary of the monthly results of all of the effluent discharge samples results set out in condition 16 for the period up to 30 June each year (the first being due on the 30 June following the commencement of the consent); ii. An analysis and interpretation of all reporting data required by this consent for the past year; iii. The level of compliance with each monitoring consent condition, with recommendations and a timetable for rectifying any non-compliance: IV. General plant performance, including: a. Any trends in changes in the discharge quality standards over time: b. The performance and effectiveness of the ultrafiltration unit; c. The levels of indicator pathogenic microorganisms; d. The effectiveness of total phosphorus removal and nutrient levels through the various seasons; and e. Any trends indicated over recent years. v. Any trends and status of 1&1 effects on total flow volumes and comment on flows during any peak storm events; VI. A review of any changes in influent load to the plant and any corresponding changes in the ammoniacal nitrogen levels; vii. A Receiving Environment Report compiling the results of the environmental monitoring required by conditions 20 - 29; viii. Any key system maintenance and/or upgrade work completed within the prior year and proposed in the forthcoming year, and changes (if any) to the Management Plan required by condition 11; ix. A review on the performance and improvements of the WWTP achieved in the past year; x. An updated Register of any trade wastes connected to the plant, as required by condition 13; XI. Details of any complaints received in accordance with condition 53	1	Ongoing

Condition Number	Consent Conditions Helensville WWTP Discharge to Water (22225 / DIS60265455)	Condition Rating	Comment
49	The conditions of this consent may be reviewed by the Manager pursuant to section 128 of the Act, by giving notice pursuant to section 129, two years after the commencement of the consent, again five years after the commencement of consent, and every five years thereafter in order: SEE CONSENT PDF FOR LIST OF REQUIREMENTS	N/A	
50	The consent holder shall within 3 months of the commencement of this consent facilitate the establishment and maintenance of a Community Liaison Group("CLG"). The consent holder shall invite representatives of the following parties to participate in the CLG: SEE CONSENT PDF FOR LIST OF REQUIREMENTS	1	CLG has been formed accordingly. Next meeting planned for Nov 2025.
51	The consent holder shall use its best endeavours to ensure that formal meetings of the CLG required by condition 50 are held at least once annually and where practicable within three months of the completion of the Annual Report. SEE CONSENT PDF FOR CONTINUED REQUIREMENTS	1	
52	The consent holder shall assist the CLG to fulfil its purpose by providing information to CLG parties the on: SEE CONSENT PDF FOR LIST OF REQUIREMENTS	1	
53	All complaints received by the consent holder about the discharges shall be logged immediately. The information shall include SEE CONSENT PDF FOR LIST OF REQUIREMENTS	1	Logbook available upon request.

Appendix E. Data Sources

Download location of environmental monitoring data used in this report.

Category	Parameter	Source platform	Tag/ID
Rainfall	Total daily rainfall volumes	MOATA	ACC - Rain -Makarau @ Folded Hills Farm ID# 645519
Discharge flow	Discharge volumes and flow rates	Pi DataLink	DTHEL_55_FIT_100_PV. F_CV
Discharge quality	Physicochemical, nutrients, bacteria indicators, viral indicators, trace metals and SVOCs	Labware/ ID	WSL_HV_STP_FINAL_EFF
Influent quality	BOD TSS Total P ammonia	Pi DataLink	DTHEL_20_1_RS_CBOD DTHEL_20_1_RS_TSS DTHEL_20_1_RS_TP DTHEL_45_6_RI_TNH3N
Air quality	Walkover odour scores	WSL shared drive	O:\Ops\Wastewater Operations\Regional Plants\Nth Region\03 Asset Ops_Nth\1-Admin_Nth\LOGSHEETS
Air quality	6-monthly odour reports	WSL shared drive	O:\Ops\Wastewater Operations\Regional Plants\Nth Region\03 Asset Ops_Nth\DTHEL\19-Environmental Management\08-Odour